

Abstract of the Disclosure

CMOS devices with balanced drive currents are formed with a PMOS transistor based on SiGe and a deposited high-k gate dielectric. Embodiments including forming a composite substrate comprising a layer of strained Si on a layer of SiGe, forming isolation regions defining a PMOS region and an NMOS region, forming a thermal oxide layer on the strained Si layer, selectively removing the thermal oxide layer and strained Si layer from the PMOS region, depositing a layer of high-k material on the layer of SiGe in the PMOS region and then forming gate electrodes in the PMOS and NMOS regions.